

GRAPHICS PRINTING
PACKAGE

For Apple II, II+, IIe, Apple III

GRAPHICS ON DISPLAY

Hi-res screen printing on most graphics printers.

Load and preview hi-res pictures. Prints regular, inverse, rotated, double-size.

Options selectable from menu. Very easy to set up and use.

Special hardware not required. Works with most interface cards, including serial.

Ideal companion for graphics tablets or plotting programs. Print what you see.

D² systems

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GETTING STARTED

1. Copy your *Graphics on Display* disk using the "COPYA" program found on the Apple System Disk.
2. Insert *Graphics on Display* into drive "1" and turn your computer on. You will see a title page.
3. Type "G" and you will see:

```

*****
*                               *
*          SCREEN PRINT OPTIONS  *
*                               *
*  PAGE 1  SIZE 1  ROTATE N  TITLE N  *
*  INVERSE N  ENHANCE N  MARGIN 10  *
*  *****  *
*  PAGE 1  FILE LOADED:  *
*  *
*  -----  *
*  PAGE 2  FILE LOADED:  *
*  *
*  *****  *

```

L) LOAD A HI-RES PICTURE

V) VIEW HI-RES SCREEN

P) PRINT PICTURE

O) CHANGE OPTIONS

4. Type "L" to load a hi-res picture. You will be asked to select page "1" or "2". *Graphics on Display* can hold two pictures at once.

5. Type "1" or "2". You will be asked for a file name to load. Type "CATALOG" for files on drive A or type "CATALOG,D2" for files on drive B and then hit 'cr' (return).

6. Type "PICTR.SPACE" and hit 'cr' to load a sample file from drive A.

7. Type "V" and you will be asked to select page "1" or "2".

8. Type "1" or "2" corresponding to your choice in item 4.

9. Hit space bar to return to menu.

10. Type "O" for options. You will see eight choices. Typing the number next to choices 1-6 will toggle between the options available for that choice. 1 = page 1, 2, or both; 2 = size 1(normal) or 2(double-size); 3 = rotated Y(yes) or N(no); 4 = titled Y(yes) or N(no); 5 = inverse Y(yes) or N(no); 6 = enhanced Y(yes) or N(no); 7 = margin, enter 0 to 99 and hit 'cr' for number of left-side spaces. Example: Type "1" for page 2, type "1" again for both pages, type "1" again for page 1. 8 = printer/interface options. You will use this option to set up *Graphics on Display* for your printer. The program defaults to an Epson printer with a parallel interface card in slot no. 1. See detailed instructions for selecting printer options.

11. Type "P" to print picture.

For detailed instructions, see the next few pages. See back page for printers.

DETAILED INSTRUCTIONS

PRINTER/INTERFACE OPTIONS

This option is used to set up the *Graphics on Display* software for your specific printer and interface card combination. In most cases you will only need to select your printer type, the remainder of the options as supplied will work with your combination. You should select this option and verify the correct slot and printer type. If you have trouble, or suspect you need to change other options, see the details in the next section.

RETURN TO MAIN MENU

Hit space bar.

DETAILS FOR SETTING UP FOR YOUR PRINTER AND INTERFACE CARD

Typing an "8" in response to the "UPDATE OPTIONS" display will allow you to check or reconfigure the *Graphics on Display* software.

CHANGE PRINTER/INTERFACE OPTIONS

- | | |
|-----------------------------|---|
| 1) SLOT | 1 |
| 2) PRINTER TYPE | 1 |
| 3) INTERFACE SET-UP POKES | Ø |
| 4) INTERFACE SET-UP STRINGS | 5 |
| 5) FILTER | 2 |
| 6) SAVE OPTIONS | |

The numbers displayed on the right represent the data currently in use. You may change the options at any time. Enter the number to the left of the option you wish to change. To retain the new options after all changes, use option 6, "SAVE OPTIONS."

SLOT NUMBER

Enter the Apple slot number containing your printer interface card.

PRINTER TYPE

Enter the printer-type number corresponding to your printer as selected from the following list:

TYPE NO.	PRINTER
1	Epson Series
1	Star Micronics—Gemini Series
2	NEC 8 \emptyset 23, C. Ioth 851 \emptyset , DMP 85
4	Anadex
5	Okidata 82A, 83A, 84 (eq./w Oki-graph).
5	Okidata 92, 93
6	Apple Dot Matrix Printer
7	Okidata 84 w/o Step II Graphics
8	IDS 46 \emptyset , 56 \emptyset , Prism Series
8	IDS Microprism 48 \emptyset

INTERFACE SET-UP POKES (Default = none)

This option allows specific memory locations to be “poked” or set to specific values after an interface card has been turned on but prior to printing. Enter the number of locations to be poked and when requested, enter the address and data in decimal.

Example: An Apple Communications Interface Card can be used with a serial printer. However, it is necessary to poke a memory location to inhibit data from being echoed to the CRT screen when dumping graphics information. It may be desired (for example) to change to *low speed*. If the interface card is in slot no. 1, the following set-up will accomplish this task:

ENTER NO.	SET-UP POKES 3	COMMENTS
ADDR DATA	1913,128	Set up no echo
ADDR,DATA	2 \emptyset 41,82	Set up low speed
ADDR,DATA	4931 \emptyset ,82	Set up low speed

INTERFACE SET-UP STRINGS (Default = 'CTRL-I 'ON)

Most parallel interface cards will require one or more control strings to be sent prior to printing graphics. Selecting this option allows the necessary string(s) to be entered and saved for *Graphics on Display* to use immediately prior to printing a picture. After a control string has been entered, the number of characters in the string will be shown as the number to the right in the “Change Printer/Interface Options” display.

Example: Most parallel interface cards must be told not to automatically send a carriage return or line feed character after the typical 4 \emptyset -character line. This can usually be done with the string: 'CTRL-I' \emptyset N (the \emptyset [zero] tells the interface card not to consider any line length, but to pass all characters as sent. Some parallel cards cannot accept a zero as shown above. In these cases, it is usually sufficient to use the string: 'CTRL-I '255N. (This may not work when using type 1 printers.)

Some cards may need to be instructed to allow output of all 8 data bits. Check the information provided with your interface card.

FILTER (Default = 2)

When graphics characters are output, all bit combinations are used. If a bit combination is to be output that corresponds to the 'CTRL-I', this can conflict with the interface-card control characters. In this case, a "filter" is provided to resolve the conflict. The filter has three options and will take the indicated action whenever a 'CTRL-I' character is to be output in the graphics printing mode. The filter options are:

FILTER OPTION	ACTION
Ø	Do nothing, output normally.
1	Send the 'CTRL-I' twice.
2	Change the 'CTRL-I' to another character.

Use option Ø if the interface card does not use the 'CTRL-I' as a control character. Use option 1 when the interface can transmit a 'CTRL-I' if it is sent twice. Option 2 will always work. This option can cause the loss of a single random dot on the printed picture. This is usually not noticeable.

SAVE OPTIONS

Selecting this option causes the current option parameters (as displayed) to be saved to disk. They will be recalled the next time *Graphics on Display* is run. NOTE: When saving new parameters, be sure your *Graphics on Display* disk is in the current drive! In special cases, you may want to save several option files. You may do this by entering a file name different from the default printer option file name of "GRP.OPT". When the *Graphics on Display* disk is booted, it always uses the "GRP.OPT" file. You may rename any of your other special printer option files to the default name prior to booting the disk.

FURTHER NOTES ON INTERFACE CARDS

The following requirements need to be met by the printer interface card. In most cases, these requirements can be met using a combination of "Interface Set-Up Pokes" and/or "Interface Set-Up Strings". If you are having trouble configuring your system, you should check the instructions for your interface card. Most problems can be tracked to incorrect set up strings (option 4 on the Printer/Interface Options menu).

YOUR PRINTER INTERFACE CARD

- 1) Must not add carriage return or line-feed characters after every 4Ø characters output.
- 2) Should not echo characters back to the CRT screen when printing.
- 3) Should allow all 8 bits to be output to the printer. (Serial cards should be set up for "8 data bits, no parity".)

NOTES ON SPECIFIC HARDWARE

GRAPLER interface card:

Use set-up string: [CTRL-I]ØN[CTRL-I]H

Use filter option: 2

ALS PRINTERMATE interface card:

Use set-up string: [CTRL-I]ØN[CTRL-I]N

Use filter option: 1

APPLE III with APPLE UPIC interface:

Use set up string: [CTRL-I] 255N

Use filter option: 2

QUADLINK on IBM PC:

Use set up string: [CTRL-I]ØN

*cannot print rotated pictures on type 1 printers (due to inability to output eighth bit)

Use filter option: 2

APPLE Parallel interface card.

Use set-up string: [CTRL-I] K[CTRL-I] 255N

Use filter option: 2

MICROTEK, INC. RV-611C

Use set-up string: [CTRL-I] 255N[CTRL-I] K
[CTRL-I] H

Use filter option: 2

APPLE Serial "Communications Card"

See example under "Interface Set-Up Pokes"

Use filter option: Ø

FURTHER NOTES ON PRINTER

Type 1 Printers:

These printers require all 8 data bits to print "rotated" pictures.

DIP-SWITCH SETTINGS FOR YOUR PRINTER*

ANADEx 9000, 9001, 9000A, 9001A, 9500, 9501, 9500A
9501A

All switches on S-3 must be off. Set switches on S-1 and
S-2 appropriately.

ANADEx 9620

All switches on S-3 must be off. Set switches on S-15
and S-14 appropriately.

EPSON MX-80; MX-FT with Grafrax-80 or Grafrax +

All switches on S-2 should be off. DIP switch S-1, switch
8 must be on and switch 3 must be off.

EPSON MX-100 and MX-100 with Grafrax +

S-2 switch 3 must be off.

S-1 switch 6 must be off and switch 8 must be on.

EPSON FX SERIES

Factory settings are compatible.

NEC 8023, DMP 85, and APPLE DMP

SW-1: 6 closed, 7 closed, 8 open.

SW-2: 2 open, 5 open, 6 closed, 7 closed.

C.ITOH 8510A

SW-1: 6 closed, 7 closed, 8 open.

SW-2: 2 open, 5 open, 6 closed, 7 closed.

SW-3: No change required.

SW-4: Switch 4 must be open for parallel interface.

OKIDATA 82A OR 83A with Graphics Upgrade and

OKIDATA 92 and 93

SW-1: Switches 1, 2, 3, 4, 8 off.

Switches 5, 6, 7 on.

SW-2: No changes required.

OKIDATA 84

Switch-1 on. All other switches off.

STAR MICRONICS GEMINI 10 and 15

1 off, 2 off, 3 off, 4 off.

*All switches not mentioned may be set as user desires.

SYSTEM REQUIREMENTS

Requires a 48K Apple II, II+, or IIe and 1 disk drive with Applesoft in ROM or a language card. Also works with Apple III in the Emulation mode and with Quadlink on the IBM PC.

COMPATABLE WITH THE FOLLOWING PRINTERS

Epson* – C.Itoh Prowriter – NEC 8023 – DMP 85 – Okidata*
– Gemini 10 or 15 – Apple Dot Matrix – Anadex – IDS 460,
560 – Microprism 480 – and Others**

** Dot-addressable graphics required*

*** Contact the factory*

CAN BE CONFIGURED FOR MOST PRINTER INTERFACES

This software can be configured to your specific printer/interface hardware like the Apple Communications Card (serial) – no need to purchase a new interface card just to print graphics.

Specific set-up information is included for many popular configurations. Special instructions are also included to allow customization for most “non-standard” configurations.

ADDITIONAL FEATURES

Simultaneous printing of hi-res pages 1 and 2.

Margin adjustments to allow printing pictures at any location on the paper.

Enhanced (double density) printing to take advantage of all your printer capabilities.

Printer and Interface options changeable from the menu.

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G R A P H I C S O N D I S P L A Y
Supplement v1.2

PRINTER / INTERFACE SET UP

A number of specific interface card drivers are included on this disk. Using one of these pre-programmed drivers will eliminate the need to manually input an "INTERFACE SET UP STRING" or "INTERFACE SET UP POKE".

TO INSTALL A PRE-PROGRAMMED DRIVER

- 1) After "booting" your "GRAPHICS ON DISPLAY" disk, type "0" for "CHANGE OPTIONS".
- 2) Type "8" for "PRINTER INTERFACE", then "7" to run the "INSTALL" program.
- 3) Follow the instructions of the "INSTALL" program. This program will modify the options file: "GRP.OPT", for your interface card and printer. After selecting your printer type, use option "4" to save your modified options file.

If your interface card is not listed within the "INSTALL" program, you must enter the "INTERFACE SET UP STRING" or "INTERFACE SET UP POKE" following the normal "GRAPHICS ON DISPLAY" instructions.

NEW FILTER TYPE

Filter type "3" has been added in the PRINTER/INTERFACE section. If your printed pictures are missing random dots, you may wish to try filter type "3". This filter changes the interface card control character in order to output picture data that would otherwise interfere with the interface card. This filter will not work with all cards.

*** REBATE OFFER ***

D2 Systems would welcome having interface set up information for your interface card. Drop us a post card with the set up information you used, and we will include it in further releases of "GRAPHICS ON DISPLAY". If we use the information you provide, we will send you a \$5.00 rebate. Don't forget to include your printer type, and the filter value used.